

## Model Question Paper

### I/II Semester

### C-PROGRAMMING FOR PROBLEM SOLVING (18CPS13/23)

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing one full question from each module.**

#### MODULE 1

- 1 a Explain different types of computer. (6Marks)
- b What is Software? Explain different types of software. (6 Marks)
- c With a neat diagram explain the basic structure of a computer (8 Marks)

OR

- 2 a Explain a general structure of C program with an example. (8 Marks)
- b What is a token? What are different types of tokens available in C language? Explain. (8 Marks)
- c Evaluate the following expressions: (4 Marks)
- i)  $22 + 3 < 6 \ \&\& \ !5 \ || \ 22 = 7 \ \&\& \ 22 - 2 > +5$
- ii)  $a + 2 > b \ || \ !c \ \&\& \ a = d * a - 2 < = e$  Where  $a=11, b=6, c=0, d=7$  and  $e=5$ .

#### MODULE 2

3. a Explain formatted input and output statement with examples. (6 Marks)
- b Explain if, if-else, nested if-else and cascaded if-else with examples and syntax. (8 Marks)
- c An electricity board charges the following rates for the use of electricity: for the first 200 units 80 paise per unit: for the next 100 units 90 paise per unit: beyond 300 units Rs 1 per unit. All users are charged a minimum of Rs. 100 as meter charge. If the total amount is more than Rs 400, then an additional surcharge of 15% of total amount is charged. Write a program to read the name of the user, number of units consumed and print out the charges. (6 Marks)

OR

- 4 a Explain the different types of loops in C with syntax. (8 Marks)
- b Show how break and continue statements are used in a C-program, with example. (4 Marks)

- c Develop a C program to generate and plot the Pascal triangle. (8 Marks)

### MODULE 3

- 5 a What is an array? How a single dimension and two dimension arrays are declared and initialized? (12 Marks)
- b Write an algorithm and develop a C program that reads N integer numbers and arrange them in ascending order using selection Sort. (08 Marks)

OR

- 6 a Explain string manipulation library functions with their syntaxes. Write a program to check whether a string is palindrome or not. (12 Marks)
- b Write an algorithm and develop a C program to search an integer from N numbers in ascending order using binary searching technique (8 Marks)

### MODULE 4

7. a What is function? Explain different classification of user defined functions based on parameter passing and return type with examples (12 Marks)
- b Write a c-program using functions to generate the Fibonacci series. (8 Marks)

OR

- 8 a What is recursion? Explain. Write a c-program using recursive function for Binary to Decimal Conversion. (10 Marks)
- b Write a program in C using functions to swap two numbers using global variables concept and call by reference concept. (6 Marks)
- c Write a c-program using function to check whether the given number is prime or not. (4 Marks)

### MODULE 5

- 9 a What is structure? Explain C syntax of structure declaration with example. (6 Marks)
- b Explain structure within a structure with an example. (6 Marks)
- c Write a c-program using structures to read, write, compute average - marks and display the students scoring above and below the average marks for a class of N students. (8 Marks)

OR

- 10 a What is a pointer? Explain how the pointer variable declared and initialized. (4 Marks)
- b Write a program in C to find the sum and mean of all elements in an array using pointers. (6 Marks)

- c Explain different categories of pre-processor directives used in C. (10 Marks)